

NOTES ON THE ECOLOGY, DISTRIBUTION, AND
TAXONOMY OF CERTAIN BUPRESTIDAE

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ABSTRACT

Host and/or distribution data are presented for species in the following genera of Buprestidae: *Agrilaxia*, *Agrilus* (15 species), *Anthaxia*, *Chrysobothris*, *Mastogenius*, and *Ptosima*. It is recommended that *Mastogenius subcyaneus crenulatus* Knull be considered a full species in view of differences in morphology and larval host.

During the past several years, studies of members of the genus *Agrilus* (Hespenheide, 1969 and unpubl.) have produced a number of apparently new records of larval ecology and adult geographic distribution, both of *Agrilus* and of other members of the family Buprestidae. These are summarized below. All specimens are presently in the collection of the author.

Agrilaxia flavimana (Gory). Specimens were reared from branches of *Quercus*, probably *stellata* Wang., NORTH CAROLINA: 2 miles W of Wake Forest, Wake Co., IV-1967.

Agrilus abductus Horn. A single female collected at Clinton, Sampson Co., North Carolina, 17-V-1968 on *Cornus florida* L. is the first record for that state.

Agrilus arcuatus arcuatus (Say). A dead male was cut from a branch of *Quercus ilicifolia* Wang., NEW JERSEY: 4 miles NE of Moorestown, Burlington Co., V-1967.

Agrilus cephalicus LeConte. Specimens were reared from *Cornus florida* L., NORTH CAROLINA: Wake Forest, V-1966.

Agrilus crinicornis Horn. Specimens have been reared abundantly from a branch of *Fagus grandifolia* Ehrh., NEW JERSEY: V-1967, 4 miles NE of Moorestown. A male was reared from *Quercus alba* L., 5 mi. ENE of Moorestown, V-1967. Fisher (1928) recorded the host as unknown.

Agrilus defectus LeConte. Several specimens were reared from branches of *Quercus*, probably *stellata* Wang., NORTH CAROLINA: W. of Wake Forest, IV-1967. A male was reared from twigs of *Quercus alba* L., NEW JERSEY: V-1967, 5 mi. ENE of Moorestown.

Agrilus diospyrioides Knull. Four specimens were reared from a branch of *Diospyros virginiana* L., NORTH CAROLINA: Raleigh, IV-1967, confirming Knull's guess that this plant is the host. A dead female *Agrilus* dug from a branch of *Diospyros*, 5 miles ENE of Moorestown, N.J., is also probably this species.

Agrilus difficilis Gory. One specimen was reared from a large branch of *Gleditsia traicanthos* L., NEW JERSEY: Merchantville, Camden Co., spring 1968. This appears to be the first record of the species from New Jersey and the first record east of the Alleghenies (Fisher, 1928).

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Agrilus fallax Say. This species has been reared abundantly from *Gleditsia triacanthos* L. from Merchantville, N.J. (Hespenheide, 1969) and from *Celtis occidentalis* L., Merchantville, and from *Celtis laevigata* Willd., VIRGINIA: Norfolk, spring 1968.

Agrilus geminatus (Say). Specimens were reared from branches of *Quercus marilandica* Muenchh., NORTH CAROLINA: W of Wake Forest, XII-1967, and from branches of *Quercus* sp., NEW JERSEY: 5 mi. ENE Moorestown, V-1966, and CONNECTICUT: East Willington, Willington Twp., spring 1970. Knull (1930) recorded *Quercus velutina* as a larval host; in addition to these rearings, adults are usually collected on the foliage of oaks. A specimen of *geminatus* was also collected 1 mi. NE Mohegan, Montville Twp., Conn., 6-VI-1972. The North Carolina and Connecticut records are new for these states.

Agrilus lecontei lecontei Saunders. This species has been reared in numbers from branches of *Celtis occidentalis* L., NEW JERSEY: Merchantville, and VIRGINIA: Winchester, Frederick Co., and from branches of *Celtis laevigata* Willd., VIRGINIA: Norfolk.

Agrilus masculinus Horn. This species was reared abundantly from branches of *Acer saccharum* Marshall and *A. platanoides* L., NEW JERSEY: Merchantville (Hespenheide, 1969). Four specimens were also dug or reared from *Gleditsia triacanthos* L. at the same locality. Specimens have been reared from *Acer saccharum*, CONNECTICUT: East Willington, and from *Acer negundo* L., NEW JERSEY: Princeton, Mercer Co., V-1966.

Agrilus osburni Knull. Six specimens were cut from a single branch of *Ostrya virginiana* (Miller) K. Koch in which they had died during emergence. The branch, containing 22 emergence holes, was collected in CONNECTICUT: Storrs, Mansfield Twp., VII-1972. This is the first published record of this species since its original description from 2 specimens collected in Ohio, as well as the first larval host record. The genitalia (figured by Knull, 1944) are very distinctive within the genus.

Agrilus paracelti Knull. Specimens fitting the description of this species have been reared in abundance from branches of *Celtis occidentalis* L., NEW JERSEY: Pennsauken, Camden Co., and VIRGINIA: Winchester. The relationship of this form to *Agrilus celti* Knull requires further study. The long series reared in New Jersey includes individuals with an entire vitta of pubescence on each elytron as well as some with virtually no pubescence except in the basal depressions of the elytra and a small elongate spot just above the middle; all intermediates are represented. The form of the genitalia also appears to vary within this species so as to include that figured for *paracelti* as well as that for *celti* (Knull, 1972, cf. Knull, 1945).

Agrilus putillus Say. This species was reared from both *Acer saccharum* Marshall and *A. platanoides* L., NEW JERSEY: Merchantville (Hespenheide, 1969). One specimen was reared from *Gleditsia triacanthos* L., spring 1968 at the same locality and is assumed to be an accidental host (see Hespenheide, 1969, for discussion of "overflow" host records).

Agrilus subcinctus Gory. Fisher (1928) recorded a series of specimens on poison ivy (*Rhus toxicodendron* L.); Knull (1932) recorded it as breeding in *Fraxinus pennsylvanicus* var. *lanceolata* Sarg. in Pennsylvania. I have taken a small series on ash (*Fraxinus* sp.), VIRGINIA: Stumpy Lake, Virginia Beach, and I have found *Agrilus* larvae in ash twigs, PENNSYLVANIA: Doylestown, Bucks Co., although I failed to rear adults. I have also seen borings and exit holes in dead twigs of poison ivy near Moorestown, N.J., which are certainly those of *Agrilus*.

Anthaxia cyanella Gory. This species was described from dark blue specimens, all of which on examination turn out to be females. These blue individuals have at times been assumed to be special female forms of *A. quercata* (e.g., Cobos, 1958), although there is also a female *Anthaxia* rather like the male of *quercata*. Between 30-IV and 19-V-1966, 6 males and 6 blue females of the *cyanella* type emerged from branches of *Cercis canadensis* L., collected at Wake Forest, N.C., on 12-IV. These males are quite different from the females and resemble the females of *quercata*, except that they lack the narrow oblique green stripe on the distal and marginal portion of the elytra and have a brighter green front (though less brilliant than that of male *quercata*); the pattern of bright green and dark on the thorax is also different between the two. The reared males are uniform among themselves and consistently different from *quercata* males, as are the females, and must, with the different host plant, represent a distinct species. The sexual dimorphism of *cyanella*, both in color and form (the male is narrower than the female), is one of the more striking cases known to me within the Buprestidae. The confusion of this species with *quercata* is due to the fact that the male of *cyanella* is intermediate in form and color between the male and female of *quercata*. Obenberger (1926) may have described the male as a distinct species, but I have not seen his types. Wellso (in prep.) will figure the genitalia of both species and discuss them further.

Anthaxia quercata Fab. A single male was reared from a branch of *Pinus rigida* Mill., MASSACHUSETTS: Marconi Memorial, South Wellfleet, Cape Cod, spring 1971. Many other emergence holes, almost certainly of this species, were seen in pine branches at this site and in Wake Forest, N.C. (in *Pinus taeda* L.). Although adults are virtually always collected on broad-leaved plants, especially oaks, the larval host appears to be pine. Numerous rearings from oak and other broad-leaved trees have never produced this species.

Anthaxia viridicornis (Say). This species has been reared from branches of the following hosts at the following localities: *Ulmus americana* L., NEW JERSEY: 1 mi. E of Merchantville, Camden Co., and 1 mi. N of Mount Laurel, Burlington Co., III & IV-1966; *Carya illinoensis* (Wang.) K. Koch, NORTH CAROLINA: 2 mi. NW of Knightdale, Wake Co., and *Carya* sp. Wake Forest, IV-1967; *Carya ovata* (Mill.) K. Koch and *Carya*, probably *glabra* (Mill.) Sweet, CONNECTICUT: Willington Twp. and *Carya* sp., Hall's Pond, Eastford Twp., 1971. I can detect no morphological differences between individuals reared from elm and those from hickory.

Chrysobothris sexsignata (Say). Four specimens were reared from branches of *Betula nigra* L., NORTH CAROLINA: Wake Forest, IV-1966. A single specimen was reared from a branch of *Gleditsia triacanthos* L., NEW JERSEY: Merchantville, spring 1969. Neither plant is recorded by Fisher (1942) as a host of this beetle.

Mastogenius subcyaneus (LeConte). Specimens were cut and reared from twigs of *Quercus*, probably *palustris* Muenchh., NEW JERSEY: Merchantville, spring 1966 (see discussion under next species).

Mastogenius crenulatus Knull. NEW STATUS. Specimens of this form were reared in small numbers from branches of *Cercis canadensis* L., NORTH CAROLINA: Wake Forest, IV-1966. In view of the difference in larval host plant, the largely sympatric distributions, and the differences in adult morphology, summarized below, it seems advisable to consider *subcyaneus* and *crenulatus* distinct species, rather than subspecies. The following table summarizes these differences.

	<i>subcyaneus</i> Lec.	<i>crenulatus</i> Knull
larval host	<i>Quercus</i>	<i>Cercis</i>
front	slightly, broadly convex with shallow medial channel	strongly convex with broad, deep medial channel
thorax	punctate, glabrous, lateral margins only slightly arcuate	rugose, pubescent, lateral margins strongly and abruptly arcuate
elytra	deep blue-violet reflections	black

Ptosima gibbicollis (Say). Two specimens were cut from branches of *Cercis canadensis* L., NORTH CAROLINA: Wake Forest, 12-IV-1966. These were adults that appeared to be overwintering: I know of no similar records of overwintering in this fashion by buprestids. *Cercis* has recently been reported by Knull (1970) as the host of this species.

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